

英 汉 对 照

Famous Scientists

著名科学家的故事

吉恩·贝瑟尔 原著

董翔晓 译 注

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译者的话

本书原名《著名科学家》(*Famous Scientists*), 由美国“动脑筋”丛书出版社于1964年出版, 后来又由英国环球出版社重新编排后于1967年在英国出版, 我们采用的是该出版社1967年版的1976年印刷本。本书以青少年为主要发行对象, 用词浅近, 句子结构简单, 叙述简明易懂, 适合于我国高中学生、理工科大学低年级学生及具有同等英语阅读能力的读者阅读。

译者将每篇都译成汉文并加以注释, 俾使读者能对照原文加深理解, 对英语自学者可能有所裨益。

原文在涉及科技知识时, 个别地方似有叙述不严密、间或内容错误之嫌, 译者通过加注或在译文中补词的方法作了一些说明, 但由于才疏学浅, 遗漏乃至误译恐怕难免, 切望读者指正。

一九八一年一月

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What is a Scientist?

At Cape Canaveral, Florida,¹ two men in a control tower watch anxiously as a huge missile rises into the air. 担心的, 害怕的. 升空

In South America, a young lady kneels in a dark cave, carefully brushing dirt from a gleaming human skull.

In a New York laboratory, a man in a white coat² skilfully extracts venom from the fangs of a poisonous snake. 人牙

These people could³ be characters in an exciting adventure story. Actually, they're real people. Each one is a scientist, working hard at his own special job. Each one is looking for facts that will solve a particular problem.

1. Cape Canaveral, Florida: cape [keip] n. 海角, 岬. Canaveral [kɑ:'nævərəl] (地名) 卡纳维拉尔. Florida ['flɒrɪdə] (地名) 佛罗里达(美国东南部的一个州). 2. in a white coat: 穿着白色的外衣.



科学家是干什么的？

在佛罗里达的卡纳维拉尔角，当一枚巨大的导弹腾空而起时，控制塔内的两个人紧张地注视着。

在南美洲，一名年轻妇女跪在黑暗的洞穴里，仔细地把尘土从一个闪发着微微磷光的骷髅上刷掉。

在纽约的一间实验室里，一名穿白外套的男子熟练地从毒蛇的毒牙中取出毒液。

这些人可能是惊险故事中的人物。但事实上，他们却是真实的人。他们个个都是科学家，致力于各自的专业工作。个个都在寻找能解答某个特定问题的事实。

Science is a careful, systematic search for facts. Scientists are investigators. They ask questions about the universe and the natural laws that govern it. By observing and experimenting they try to find out the answers to those questions.

Great scientific discoveries seldom happen by accident⁴. They are nearly always the result of keen observation, accurate experiments and a great deal of⁵ hard work. Although all scientists have their own individual ways of working, they usually follow a general pattern known as the *scientific method*.

It starts with *observation*. The scientist is a trained observer. After studying all the known facts about the problem he's working on, he gathers additional facts through his own personal observations. From them he develops an idea or *hypothesis* that he hopes will explain or solve the problem. *[Handwritten: This is the first step]*

Next, he *experiments*. He makes careful tests to find out just how true his hypothesis is. Very often, he discovers that it is wrong. But sometimes he is able to collect enough evidence to prove that his idea is right.

After his hypothesis has been thoroughly tested by many other scientists and found to be absolutely correct, it becomes known as a law or principle. All this may take months, years, or even a whole lifetime. But when it does happen, that scientist has the satisfaction of

科学就是仔细地、系统地寻找事实。科学家是研究人员。他们就宇宙和支配宇宙的自然规律提出问题，并通过观察和实验尽力找出解答这些问题的答案。

伟大的科学发现很少是偶然发生的。它们几乎总是敏锐的观察、精确的实验和大量的艰巨工作的结果。虽然科学家们各有各的工作方式，但他们通常总是遵循一种称为科学方法的一般模式。

这种模式以观察为起点。科学家是受过训练的观察者。在研究了有关他正在探索的那个问题的全部已知事实之后，他通过自己的观察收集其他的事实。根据这些事实，他产生一种想法或假设，冀其解释或解答那个问题。

接着，他做实验。他进行细致的试验，来判断他的假设的正确程度。他常常发现自己的假设是错误的。但有时候，他能收集到足够的证据，证明自己的想法是对的。

他的假设经其他许多科学家彻底地验证过，被断定为绝对正确之后，就被称为定律或定理。这一切可能需要几个月、几年、甚至毕生的功夫。但一

3. could: 表示对某种可能性的猜测。不表示 can 的过去式。

4. by accident: 偶然地; 凑巧。5. a great deal of: 大量的; 很多。6. be interested in: 对……感兴趣。

knowing that he has added an important bit of knowledge to the world's storehouse of information.

A scientist has a choice of many subjects to investigate. He may be interested in⁶ the earth itself—its structure and its history. An earth-investigator is called a *geologist*.

Biology is the study of all living things that 居住 inhabit the earth. A scientist who studies animals is a *zoologist*. One who investigates plants is called a *botanist*.

作用, 功 The investigation of how plants and animals function is called *physiology*. *Medical research* and *bacteriology* are sub-divisions of this science.

A scientist who studies the sun, moon, stars and planets is an *astronomer*.

Chemistry is the study of the materials that make up⁷ the universe, and the various changes that take place⁸ in those materials.

Physics is the investigation of matter and energy, such as⁹ heat, light, sound and electricity.

Mathematics is the science of numbers. It is used in nearly all the other sciences for measuring and counting and for solving all kinds of problems.

Of course, each main branch of science is divided into many smaller, specialized sections.

部分.

7. make up: 构成. 8. take place: 发生. 9. such as: 譬如; 诸如.

且这样的事情真的发生，那位科学家就会心满意足地认识到，他给世界知识宝库增添了一份重要的财富。

科学家有许多研究科目可选择。他也许对地球本身——它的结构及历史——感兴趣。地球研究者叫做地质学家。

生物学研究生存于地球上的一切生物。研究动物的科学家是动物学家。研究植物的科学家叫做植物学家。

研究动植物机体功能的叫做生理学。医学研究和细菌学是这门科学的两个分支。

研究太阳、月亮、星球和行星的科学家是天文学家。

化学研究构成宇宙的种种物质，以及发生于这些物质内部的各种变化。

物理学研究物质和能量，譬如热、光、声音和电。

数学是数字的科学。在几乎所有的其他各门科学中，都用数学来测量和计数，并解决各类问题。

当然，科学的每一个主要分支又分为许多更小的专业化的部分。有的人也许把主要精力放在探索地球的年龄上，他叫做地球化学家。也有的人也许

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One man may concentrate mainly on discovering the age of the earth. He is called a *geochemist*. Another may work exclusively in the field of man-made spacecraft. This science is known as *celestial mechanics*. A scientist who specializes in the study of disease-causing agents called viruses, is known as a *virologist*. There are already dozens of scientific specialties, and new ones are rapidly appearing.

In every field of science there are certain men and women whose work has been outstanding. Here you will read about just a few of the world's most famous scientists. Of course, there are many others, equally interesting and important.

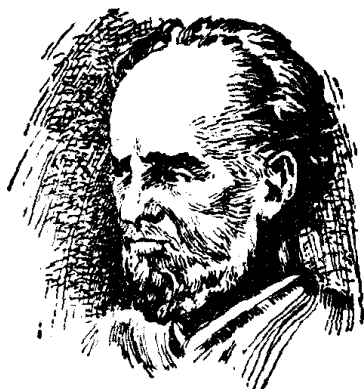
Perhaps this book will make you curious to find out more about scientists, how they work and what kind of people they are. Perhaps you, too, will come to share¹⁰ the one thing all scientists, everywhere, have in common: an intense desire to discover new truths¹¹ about the world they live in.

10. come to share: 这儿的 come 无“来”的意思。come + 动词不定式, 表示从一种情况逐步转变到另一种情况。 11. new truths: truth 作为不可数名词时, 意思是“真理”; 作为可数名词时, 意思是“事实”。 new truths 指“以前未被人发现的事实”。

专搞人造宇宙飞船方面的工作。这门科学称为天体力学。专门研究病毒这种致病体的科学家称为病毒学家。现在已经有了几十个科学专业，而且新的专业还在迅速地涌现出来。

在科学的每一个领域里，都有某些功绩卓著的男女。你将在本书中读到几个世界上最著名的科学家。当然，还有很多其他的科学家，他们也同样有趣、同样重要。

也许这本书会使你很想进一步了解科学家们，了解他们是怎样工作的，以及他们是什么样的人。也许你也会有普天下一切科学家都具有的一个共同特点：有一种强烈的愿望，要去探索他们所生活的世界中尚未被揭示的一个个事实。



Archimedes¹

(287-212 B.C.²)

**Why is he considered one of the
early “true scientists”?**

Have you heard about one of the most important baths in history? According to³ a famous legend, it happened over two thousand years ago in the ancient Greek city of Syracuse⁴. A famous Greek scientist named Archimedes (Ar-ka-mead-eze) stepped into a tub full of water at the public bath house. As he settled back and watched the water flow out over the sides of the tub, he was suddenly struck by a wonderful idea. He leaped out of the tub, wrapped a towel around himself and went running toward home.

阿基米德

(前 287—前 212)

为什么人们认为他是早期
“真正的科学家”之一？

你听说过历史上最重要的一次沐浴吗？据传，那次沐浴发生在两千多年前古希腊的叙拉古城。一位名叫阿基米德的著名希腊科学家跨进公共浴室里一只盛满了水的澡盆。当他仰靠在澡盆里，注视着洗澡水溢出盆边时，他的脑海中突然闪现出一个奇妙的念头。他跳出澡盆，拿条毛巾往身上一裹，就往家里飞跑。

-
1. Archimedes [ˌɑːki'miːdiːz] 或 [ˌɑːkei'miːdiːz] (人名) 阿基米德。 2. B.C. = Before Christ 公元前。Christ [kraɪst] n. 基督教所指的救世主 (特指耶稣基督)。 3. According to: 根据。 4. Syracuse ['saɪərəkjʊːz] (地名) 叙拉古。

"Eureka⁵ ! Eureka !" he cried. "I've found it ! I've found it !"

What Archimedes found when he stepped into that bathtub was the answer to a problem he had been working on for some time. The Greek King Hiero had ordered his royal jeweller to make a new crown, and had given him a certain amount of gold to make it with. But the King suspected the jeweller of stealing part of the gold, and replacing it with cheaper silver. Hiero asked his court scientist, Archimedes, to find out the truth of the matter.

Archimedes knew that metals have different weights. A cube of gold is heavier than a silver cube the same size. He *could* melt the crown and mould it into a cube, then compare its weight with the weight of a cube of gold the same size. But that would ruin the crown. There must be some other way to do it.

He was considering this perplexing problem that day at the bath house, so the story goes. He noticed that the water level in the tub rose when he immersed his body; or, the weight of his body displaced a certain amount of water in the bathtub. He rushed home and began to experiment with weights and containers of water. He soon discovered that different materials do not displace the same amount of water⁶. Since

5. Eureka ! (希腊语) = I have found [it] ! 6. that different materials ... water: 从物理学的角度来讲, 这句话子在逻辑上似